A personal message from Bill Archer

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From the very beginning of the Manhattan Project, Los Alamos has been at the forefront of developing and using computers for scientific research. In the 1960s the need for increased computational capability led to what became known as supercomputers, specialized computers that provide far more capability than normal commercial systems.

The Trinity Test of 70 years ago this month was the first full#scale test of nuclear weapons and marked the start of the nuclear era. We are now entering a new era in supercomputing with a system we also call Trinity, which will provide at least eight times more performance than our current supercomputer, Cielo, while only using three times more electrical power.

Los Alamos' Trinity supercomputer is the first of a generation of Advanced Technology Systems being developed for the Department of Energy's National Nuclear Security Administration. We started to install the first phase of Trinity in June, and this first phase

should be fully operational by June 2016. The second phase will be installed in 2016 and will be ready by the end of that year.

Once fully operative, Trinity will be the most capable supercomputer in the Department of Energy's computing stable. The new system will allow this country to carry out unprecedented three#dimensional multi#physics simulations that are essential to understanding the complex impacts of aging on the U.S. nuclear stockpile.

For millennia, humans have needed tools to help them perform a wide variety of calculating tasks. The first slide rule and mechanical calculator were invented in the 17th century, but it took another 200 years for advanced punch-card machines like the automatic piano player to come about.

When Project Y, the Los Alamos portion of the Manhattan Project, was assembled in the wake of the attack on Pearl Harbor, mechanical calculating machines such as the Marchant desktop calculator performed the initial calculations but were soon supplemented by far more capable IBM punch#card computers.

The early Project Y computers had a key role in developing the nuclear bombs created to end the war. Today's advanced computers are key to the weapons simulations that the United States relies on to keep the nuclear stockpile safe, secure and reliable after the end of underground nuclear testing in 1992.

Thanks to supercomputers like Trinity, we are entering a new computing era.

- Bill Archer